



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/832,895 | 04/12/2001 | Hijin Sato | 206006US-2 | 1666 |
| 22850 | 7590 | 01/16/2004 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | DEAN, RAYMOND S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2684 | |

DATE MAILED: 01/16/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,895

Applicant(s)

SATO ET AL.

Examiner

Raymond S Dean

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7. 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al. (US 2003/0012195 A1) in view of Kumar (US 6,269,080 B1).

Regarding Claim 1, Ohkubo teaches a retransmission control method in a multicast service providing system in which an information delivery apparatus delivers multicast information to radio terminals within a service area of the information delivery apparatus, said method comprising: determining at least one radio terminal that is placed in retransmission control; and delivering, when a request for retransmission concerning the multicast information sent by said at least one radio terminal is received by the information delivery apparatus, the multicast information to the radio terminals within the service area (Abstract, Sections 0016 – 0019).

Ohkubo does not specifically teach a retransmission control method comprising permitting at least one radio terminal to be placed in retransmission control.

Kumar teaches a retransmission control method comprising permitting at least one terminal to be placed in retransmission control (Figure 4, Column 6 lines 52 – 67, Column 7 lines 1 – 17).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the permission method taught in Kumar in the multicast system taught in Ohkubo to eliminate the network congestion that would occur when there are multiple radio terminals requesting retransmissions from the base station or information delivery apparatus in Ohkubo.

Regarding Claims 2 – 11, Ohkubo in view of Kumar teaches all of the claimed limitations recited in Claim 1.

Regarding Claim 2, Ohkubo further teaches the step comprising a step of determining, at the information delivery apparatus, said at least one radio terminal (Abstract, Sections 0016 – 0019, base station in the information delivery apparatus).

Ohkubo does not specifically teach a retransmission control method that further comprises a step of notifying said at least one radio terminal that a request for retransmission is permitted.

Kumar teaches a retransmission control method that further comprises a step of notifying said at least one terminal that a request for retransmission is permitted (Figure 4, Figure 5, Column 7 lines 61 – 67, Column 8 lines 1 – 10, step 504 notifies the receiving terminal that it is permitted to request retransmissions).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the permission notifying method taught in Kumar in the multicast system taught in Ohkubo to eliminate the network congestion that would occur when there are multiple radio terminals requesting retransmissions from the base station or information delivery apparatus in Ohkubo.

Regarding Claim 3, Ohkubo teaches a step that comprises a step of determining, at each radio terminal, whether its own terminal is placed in retransmission control (Abstract, Sections 0016 – 0019, and 0068).

Ohkubo does not specifically teach a retransmission control method comprising permitting at least one radio terminal to be placed in retransmission control.

Kumar teaches a retransmission control method comprising permitting at least one terminal to be placed in retransmission control (Figure 4, Column 6 lines 52 – 67, Column 7 lines 1 – 17).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the permission method taught in Kumar in the multicast system taught in Ohkubo to eliminate the network congestion that would occur when there are multiple radio terminals requesting retransmissions from the base station or information delivery apparatus in Ohkubo.

Regarding Claim 4, Ohkubo further teaches the step of determining a plurality of radio terminals to be placed in retransmission control (Abstract, Sections 0016 – 0019).

Regarding Claim 5, Ohkubo further teaches radio terminals in the service area (Abstract, Sections 0016 – 0019).

Ohkubo does not specifically teach the step comprising a step of grouping radio terminals in the service area on the basis of unique information assigned to the radio terminals and the step of determining at least one radio terminal on the basis of grouping radio terminals.

Kumar teaches the step comprising a step of grouping terminals on the basis of unique information assigned to the terminals; and the step determining at least one terminal on the basis of grouping terminals (Figure 4, Figure 9, Figure 10, Column 6 lines 52 – 67, Column 7 lines 1 – 17, Column 10 lines 27 – 67, Column 11 lines 1 – 15).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the grouping method taught in Kumar in the multicast system taught in Ohkubo to allow group specific data to be transmitted to the interested group thus creating an efficient use of valuable transmission resources.

Regarding Claim 6, Ohkubo further teaches a step that determines at least one radio terminal on the basis of a quality of communications between the information delivery apparatus and each of the radio terminals (Sections 0021 – 0022).

Regarding Claim 7, Ohkubo further teaches a step that determines at least one radio terminal on the basis of distances between the information delivery apparatus and the radio terminals (Sections 0021 – 0022, the signal quality received at the base

station has a direct relation to the distance of the mobile station from said base station thus distance is an inherent characteristic).

Regarding Claim 8, Ohkubo further teaches a step that determines at least one radio terminal on the basis of directions of the radio terminals from the information delivery apparatus (Sections 0029, 0030, 0096, 0098, and 0100, since this is an antenna array the beams can be steered in multiple directions).

Regarding Claim 9, Ohkubo further teaches a step that determines at least one radio terminal on the basis of moving speeds of the radio terminals (Sections 0021 – 0022, the speed of a radio terminal has a direct relation to the distance of the mobile station from the base station, which ultimately is directly related to the received signal quality thus the speed is an inherent characteristic).

Regarding Claim 10, Ohkubo teaches a radio terminal (Abstract, Sections 0016 – 0019).

Ohkubo does not specifically teach a step of changing said at least one radio terminal to another radio terminal on the basis of status of retransmission requests.

Kumar teaches teach a step of changing at least one terminal to another terminal on the basis of status of retransmission requests (Figure 4, Column 6 lines 52 – 67, Column 7 lines 1 – 17).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the above method taught in

Kumar in the system of Ohkubo such that there is optimal and efficient use of valuable transmission resources.

Regarding Claim 11, Ohkubo teaches a radio terminal (Abstract, Sections 0016 – 0019).

Ohkubo does not specifically teach a step of changing said at least one radio terminal to another radio terminal when said at least one radio terminal terminates reception of the multicast information.

Kumar teaches a step of changing at least one terminal to another terminal when said at least one terminal terminates reception of the multicast information (Column 6 lines 23 – 43, Column 6 lines 52 – 67, Column 7 lines 1 – 17, if the active receiver signs off there will inherently be a selection of another active receiver).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the above method taught in Kumar in the system of Ohkubo such that there is optimal and efficient use of valuable transmission resources.

Regarding Claim 12, Ohkubo teaches an information delivery apparatus delivering multicast information to radio terminals located within a service area via a radio section, said comprising: a first unit determining at least one radio terminal that is placed in retransmission control; and a second unit delivering, when a request for retransmitting the multicast information sent by said at least one radio terminal is

received, the multicast information to the radio terminals within the service area (Figure 3, Abstract, Sections 0016 – 0019).

Ohkubo does not specifically teach a retransmission control method comprising permitting at least one radio terminal to be placed in retransmission control.

Kumar teaches a retransmission control method comprising permitting at least one terminal to be placed in retransmission control (Figure 4, Column 6 lines 52 – 67, Column 7 lines 1 – 17).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the permission method taught in Kumar in the multicast system taught in Ohkubo to eliminate the network congestion that would occur when there are multiple radio terminals requesting retransmissions from the base station or information delivery apparatus in Ohkubo.

Regarding Claims 13 and 14, Ohkubo in view of Kumar teaches all of the claimed limitations recited in Claim 12.

Regarding Claim 13, Ohkubo further teaches a first unit that determines a plurality of radio terminals to be placed in retransmission control (Figure 3, Abstract, Sections 0016 – 0019, ARQ processor is first unit).

Regarding Claim 14, Ohkubo teaches a first unit and a radio terminal (Figure 3, Abstract, Sections 0016 – 0019).

Ohkubo does not specifically teach a third unit changing said at least one radio terminal determined by the first unit to another radio terminal on the basis of retransmission requests.

Kumar teaches a unit changing at least one terminal to another terminal on the basis of retransmission requests (Figure 4, Column 6 lines 52 – 67, Column 7 lines 1 – 17, server comprises the unit).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the unit taught in Kumar in the system of Ohkubo such that there is optimal and efficient use of valuable transmission resources.

Regarding Claim 15, Ohkubo in view of Kumar teaches all of the claimed limitations recited in Claim 14.

Ohkubo teaches a fourth unit-managing status of retransmission requests sent by radio terminals placed in the retransmission control (Figure 3, ARQ processor is unit that manages the status of retransmission requests).

Ohkubo does not specifically teach a third unit changing said at least one radio terminal on the basis of the status of retransmission requests managed by the fourth unit.

Kumar teaches a unit changing at least one terminal on the basis of the status of retransmission requests (Figure 4, Column 6 lines 52 – 67, Column 7 lines 1 – 17, server comprises the unit).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the unit taught in Kumar in the system of Ohkubo such that there is optimal and efficient use of valuable transmission resources.

Regarding Claim 19, Ohkubo teaches all of the claimed limitations recited in Claim 16. Ohkubo further teaches a third unit which corrects the multicast information by part of the multicast information sent by the information delivery apparatus retransmitted in response to a request for retransmission by the second unit when the first unit determines that its own terminal is placed in retransmission control (Figure 3, Section 0068, the error detection /ARQ processor comprises the third unit, the retransmitted packets are transmitted from the receiver to the said error detection/ARQ processor, said error detection/ARQ processor replaces the corrupted packets with the newly received retransmitted packets).

Ohkubo does not specifically teach correcting the multicast information by part of the multicast information sent by the information delivery apparatus transmitted in response to a request for retransmission by another radio terminal when the first unit determines that its own terminal is placed out of retransmission control.

Kumar teaches correcting the multicast information by part of the multicast information sent by the information delivery apparatus transmitted in response to a request for retransmission by another terminal when the first unit determines that its own terminal is placed out of retransmission control (Figure 4, Column 6 lines 52 – 67,

Column 7 lines 1 – 10, the non active receivers in the group will receive the newly retransmitted packets thus allowing said non active receivers to correct the corrupted packets).

Ohkubo and Kumar (Column 4 lines 22 – 28, satellite has wireless RF links) both teach a wireless multicast system thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the unit taught in Kumar in the system of Ohkubo such that there is optimal and efficient use of valuable transmission resources.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 16 – 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohkubo et al. (US 2003/0012195 A1).

Regarding Claim 16, Ohkubo teaches a radio terminal receiving multicast information from an information delivery apparatus via a radio section, said radio terminal comprising: a first unit determining whether its own terminal is placed in retransmission control; and a second unit requesting retransmission concerning the

multicast information which has not been duly received in a case whether the first unit determines its own terminal to be placed in retransmission control (Figure 3, Section 0068, error detection ARQ processor comprises first and second unit).

Regarding Claims 17 and 18, Ohkubo teaches all of the claimed limitations recited in Claim 16.

Regarding Claim 17, Ohkubo further teaches wherein the first unit determines whether its own terminal is placed in retransmission control on the basis of given information sent by the information delivery apparatus (Figure 3, Section 0068).

Regarding Claim 18, Ohkubo further teaches wherein the first unit determines whether its own terminal is placed in retransmission control on the basis of a quality of communications with the information delivery apparatus (Figure 3, Section 0068, bad signal quality will cause data and bit errors which will cause the radio terminal to request a retransmission).

Conclusion

5. Any inquiry concerning this communication should be directed to Raymond S. Dean at telephone number (703) 305-8998.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Art Unit: 2684

Or faxed to:

(703) 872-9314 (for Technology center 2600 only)

Hand –delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Mike
Cowan

Byrd Allen